DOCUMENT RESUME

ED 055 033 SP 005 259

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TITLE Relevant Variables in Teacher Supply and Demand.

INSTITUTION State Univ. of New York, Buffalo. Educational Research and Development Complex.

PUB DATE Dec 70

NOTE 47p.

EDRS PRICE MF-$0.65 HC-$3.29

DESCRIPTORS Employment Trends; *Surveys; *Teacher Employment; *Teacher Supply and Demand; *Trend Analysis

IDENTIFIERS New York State

ABSTRACT

The shortage of teachers has been discussed for years as a crucial problem. In 1969, the National Education Association estimated that the teacher shortage was 224,200 when a minimum quality criterion was considered. Despite this apparent shortage of "qualified" teachers, decreases in the number of births, and increases in the number of college graduate education majors reveal a trend towards a surplus of available teachers. Although presently the oversupply of teachers is in selected areas, such as secondary social studies and male physical education, projections indicate that surpluses will soon exist in all areas. Rates of increase for education graduates in New York State exceed those of the nation. Thus the problem of teacher suprlus is more acute in this state. Only 60 percent of State University College at Buffalo elementary education graduates were placed in teaching positions in 1970, as compared with 83 percent in 1966. In view of this problem, it is recommended that programs to prepare junior and community college teachers be expanded, that emphasis be shifted from preparing new teachers to improving the competencies of inservice teachers, that admission standards for teacher education programs be modified, and that student advisors at both the high school and college level become more familiar with trends in the demand for manpower. (Author/RT)

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# RELEVANT VARIABLES IN TEACHER SUPPLY AND DEMAND

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SP005259

December, 1970

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# RELEVANT VARIABLES IN TEACHER SUPPLY AND DEMAND

## NATIONAL IMPLICATIONS

## I. INTRODUCTION

Manpower planning is a problem which confronts the entire economy and not simply educators. Relationships between labor supply, labor productivity and the demand for goods and services are complex and difficult to identify. Predictive models encompassing the variables which significantly affect the labor supply-demand phenomenon must be developed, since simplistic projections based on gross figures for any given year are inadequate for long range planning. Essentially, research relating to teacher supply and demand has been limited in this respect since it has been descriptive with little effort devoted to analyzing population trends and college attendance figures.

For example, the shortage of teachers has been discussed for years as a crucial problem. In 1963 the NEA determined that 91,556 teachers were employed through emergency certificates, or approximately one teacher in 16 and estimated that the total teacher shortage was 134,000. Three years later in 1966 the NEA estimated a shortage of 232,384 classroom teachers and concluded that 364,503 new teachers were needed to meet minimum standards of quality. To the uninformed, these data imply that thousands of classrooms were totally unstaffed, while additional thousands were staffed with grossly unqualified personnel. Although information is not available, it seems likely that many of the uncertified or "unqualified" teachers complete additional certification. Consequently, many uncertified faculty would probably remain in their positions, despite the availability of newly graduated certified teachers.

## II. MINIMUM QUALITY CRITERION

In 1969 the NEA continued to estimate that the demand for new teachers exceeded the expected supply by 224,200, when a minimum quality criterion was considered. (See Table 1)

According to the NEA, the minimum quality criterion assumes that all teachers without bachelor's degrees will be replaced with degree teachers. This would mean that out of the 84,182 elementary school teachers employed in 1968-69 without a bachelor's degree, 67,300 new graduates would be needed to replace those who have not completed the degree by 1969-70. At the secondary level, only 9,499 did not meet the bachelor's degree requirement. Of this number, 7,600 new graduates are expected to be needed to replace those who have not completed the degree by 1969-70.

The discrepancy between the number of teachers without degrees and the number needed to replace them can be attributed to factors such as retirement and resignations. The minimum quality criterion also demands a reduction in overcrowded classrooms. The maximum class size in elementary school should be no more than 34 pupils and the maximum average daily teacher load for secondary schools should be no more than 199. This would require the employment of 10,400 additional elementary teachers and 7,600 additional secondary teachers.

Although this quality criterion is not excessive, it is unlikely that school boards are in a position to reduce class loads by hiring more teachers and building more classrooms. The average expenditure for a single classroom in 1967-68 was $60,000 according to the United

Table 1

ESTIMATED DEMAND FOR NEW TEACHERS
BASED ON THE QUALITY CRITERION (1969)

| Source of Demand | Estimated Demand for New Teachers | | |
|---|---|---|---|
| | Elementary | Secondary | Total |
| Staff requirement of increased enrollment | 20,000 | 34,000 | 54,000 |
| Teacher turnover | 87,400 | 74,300 | 161,700 |
| Replacement of teachers with sub-standard qualifications | 67,300 | 7,600 | 74,900 |
| Reduction of overcrowded classes | 10,400 | 8,900 | 19,300 |
| Special Instructional Services | 105,850 | 67,650 | 173,500 |
| TOTAL | 290,950 | 192,450 | 483,400 |

Source: Teacher Supply and Demand in Public Schools, 1969
National Education Association-Research Division 1970 p. 30.

States Office of Education. It was also estimated that 69,000 new classrooms are built each year to replace old structures and meet the increased enrollments. The average income of instructional staff for 1970-71 is $8,020 according to the Office of Education projections. The increased difficulty of passing school budgets would seem to preclude public acceptance of the additional expenditures which the NEA quality criteria would demand. The trend in rejection of school budgets does not necessarily reflect a dissatisfaction with education or a change in attitude toward education but rather provides the public with one control over taxation and the unwillingness to increase taxes is generally expressed in the defeat of school budgets.

The quality criterion estimate for 1969 also includes (1) 106,300 additional teachers for special education (physical handicapped, emotional and learning disabilities, etc.); (2) 41,200 kindergarten teachers to staff new kindergartens; (3) 1,000 to enlarge offerings in elementary and secondary schools; and, (4) 25,000 to reduce the misassignment of teachers in fields other than their area of major preparation. Although these are beneficial services, the likelihood of drastic reductions in the deficiencies in these areas appears remote. However, some improvements will be made by special programs and the reduction of class size. If quality control criteria were implemented over a ten-year period, much of the surplus would be absorbed until 1976.

## III. TRENDS IN TEACHER DEMAND

Table 2 shows that the trend in teacher demand has changed from 1966 to 1969. In 1969, only two areas, mathematics and science, show

shortages, while many areas showed an oversupply, termed by the NEA as an "adequate supply." The overall totals for elementary and secondary show a near balance. The greatest change in demand occurred in elementary education. In 1966 there was a shortage of 37,677 (2.1 percent of all public school elementary teachers) teachers which changed to an oversupply of 29,361 (2.8 percent of all public school elementary teachers) in 1969. Secondary school supply and demand was about equal in 1966 and 1967, but became an oversupply of 26,035 (3 percent of all public school secondary teachers) in 1969. Art, home economics, industrial arts, and foreign languages have remained relatively stable with only slight increases. Mathematics and the physical sciences showed consistent shortages over the four year period, but this appears to be declining. Social studies has continued to maintain a surplus which appears to be increasing.

The trend seems relatively consistent in all areas. The total indicates that 56,842 education graduates were not able to find teaching positions in 1969. This represented 2.9 percent of all public school teachers and assumes that graduates would be willing to obtain positions in any location, which is far from the case. About 80 percent of education graduates teaching in 1968 remained within the state from which they graduated. Education graduates who actually begin teaching the following term range from 78.0 to 83.2 percent for elementary and 64.3 to 69.2 percent for high school over the past 10 years.

The concept of teacher supply should be a predictable phenomenon which conforms closely to the classic economic law of supply and demand which states that if the price of goods or services increase, available

Table 2

ESTIMATED DEMAND FOR BEGINNING TEACHERS

| | Compared to Supply[1] | | | | General condition for 1969 |
|---|---|---|---|---|---|
| Assignment | 1966 | 1967 | 1968 | 1969 | |
| Elementary School Total | -37,677 | -1,665 | + 6,688 | +29,361 | Near Balance |
| Secondary School Total | + 533 | -1,512 | +15,591 | 26,035 | |
| Art[2] | + 1,462 | 1,271 | + 2,486 | 2,979 | Adequate Supply |
| English | - 1,987 | -3,677 | - 503 | 3,306 | Adequate Supply |
| Foreign[2] Language | + 969 | + 674 | + 1,905 | + 1,854 | Adequate Supply |
| Home Economics | + 51 | - 174 | + 1,491 | 1,862 | Adequate Supply |
| Industrial Arts | 147 | + 163 | + 801 | 696 | Near Balance |
| Mathematics | - 2,928 | -1,929 | - 3,578 | - 1,675 | Shortage |
| Natural and Physical Science | - 2,499 | - 805 | - 2,367 | - 1,067 | Shortage |
| Social Studies | + 3,967 | ·1,069 | + 5,648 | 7,166 | Adequate Supply |
| Special Education[2] | - | +1,969 | - 2,589 | 3,909 | Low Supply |
| TOTAL | -37,144 | -3,177 | +22,279 | +56,842 | |

1. From NEA Research Division: Teacher Supply and Demand in Public Schools "Summary of Estimated Supply compared with Adjusted Trend Criterion Estimate of Demand for Beginning Teachers" National Estimate.

   + - indicates oversupply - indicates demand is greater than supply

2. Combined Elementary and Secondary.

quantities will also increase. Conversely, when price falls, quantity will diminish. Although it is possible to establish a relationship between wages and the available supply of a given segment of labor market, it may be naive to isolate the economic sphere as the most significant factor. A close examination of other factors may be more revealing.

## IV. BIRTH TRENDS

When trends in births are compared to college degrees in general and education degrees in particular, a potentially large surplus of education graduates is revealed. While births have declined both in rate and number, the number of college degrees has rapidly increased. (See Table 3) Over the 9 year period from 1959-1968, the number of births declined from 4,298,000 to 3,520,000 a decrease of 778,000, or 18 percent. The number of bachelor's and first professional degrees granted increased from 383,000 in 1959 to 685,000 in 1968, an increase of 302,000 or 79 percent. During this period the number of college graduates almost doubled, while number of births slowly declined. Projections of births predict a gradual increase to 3,893,000 by 1975, and projection of college graduates predict 898,000 graduates by that year. This represents a 10.6 percent increase in births and a 31.1 percent increase in college graduates when these data are compared to 1968 figures.

Consequently, in the future elementary school enrollments which have stabilized, will decline through 1977, while secondary school enrollments are expected to increase through 1977, when they will stabilize. These projections are based on the United States Department of Commerce, Bureau of Census, Series C population projection, which are

Table 3

BIRTHS AND COLLEGE DEGREES: UNITED STATES (In Thousands)

| Year | Births[1] | Earned Degrees[2] | Education Degrees[3] | Graduates Certified To Teach[4] | Demand for Additional Teachers[5] |
|---|---|---|---|---|---|
| 1956-57 | 4312 | 338 | 62 | 109 | |
| 58 | 4313 | 363 | 65 | 114 | |
| 59 | 4298 | 383 | 70 | 119 | |
| 60 | 4279 | 392 | 71 | 130 | |
| 61 | 4350 | 399 | 74 | 129 | |
| 62 | 4259 | 418 | 78 | 142 | |
| 63 | 4185 | 448 | 82 | 158 | |
| 64 | 4119 | 499 | 91 | 174 | 191 |
| 65 | 3940 | 535 | 96 | 191 | 197 |
| 66 | 3716 | 551[6] | 94[6] | 200 | 194 |
| 67 | 3608 | 584[6] | 100[6] | 221 | 216 |
| 68 | 3520 | 685[7] | 117[7] | 234[6] | 209[7] |
| 69 | 3567[7] | 749 | 127 | 280[6] | 203[7] |
| 70 | 3569[7] | 746 | 126 | | 185 |
| 71 | 3592 | 760 | 127 | | 181 |
| 72 | 3648 | 785 | 131 | | 174 |
| 73 | 3717 | 821 | 136 | | 168 |
| 74 | 3799 | 860 | 142 | | 172 |
| 75 | 3893 | 898 | 147 | | 168 |
| 76 | | 931 | 151 | | 171 |
| 77 | | 955 | 154 | | 173 |
| 78 | | 980 | 157 | | 172 |

1. Financial Status of the Public Schools, 1970 NEA Committee on Ed. Finance (Births for Year 1957).
2. Projections of Educational Statistics to 1977-78 (1968 ED.), U. S. Dept. of HEW, Office of Education, p. 31, Bachelor's and First Professional.
3. Ibid., p. 35.
4. Teacher Supply and Demand in Public Schools, NEA Research Division 1969, p. 14, includes degrees but is limited to First Certification.
5. Op. cit., Projections, p. 51, Estimated Demand for Classroom in Regular Public Elementary and Secondary Day Schools: United States, Fall 1962-1977.
6. Estimated.
7. Projected.

based on a completed fertility rate of 2,775 children per 1,000 women between the ages of 15 and 44. However, the use of Series D projection might be more accurate, since it assumes a fertility rate of 2,450 children per 1,000 women, which is less than fertility rates in the 50's. The use of Series D projections may be more realistic, based on the decline in birth rates from 118 in 1960 to 91.3 in 1966.

## V. TEACHER EDUCATION GRADUATES

The actual number of students preparing to teach may be even more significant. This particular statistic seems to be more elusive, since there is disagreement among sources regarding the number of education graduates in a given year. The major difficulty is definition of terms. Office of Education statistics concerning education degrees are consistently about half of the NEA statistics reporting the number of graduates certified to teach. Part of the discrepancy can be accounted for by the inclusion of master's degree students in the NEA statistics. However, this is further complicated by the fact that prior to 1968, the NEA did not include master's degree students. Further, their statistics included only beginning teachers and not teachers returning to school on a part-time basis to complete permanent certification requirements. Therefore, the major reason for the reporting discrepancies must lie in the way degrees are classified. The NEA reports information on all students meeting certification requirements in a given field, while the USOE report contains only those students who receive education degrees. Many students receive certification without obtaining an education degree, a situation primarily true in secondary education. Thus, it would appear that the NEA provides a more realistic appraisal

of the teacher supply market and will be used as a primary source of information for this report.

According to the NEA, the supply of certified teacher graduates has increased dramatically during the past 13 years, during which time the number of certified graduates more than doubled. (See Table 4) In 1957, for example, 109,000 additional certified teachers became part of the labor force. In 1969, 280,000 certified teachers were graduated. An estimate based on preliminary information indicated that the largest increase occurred in 1969, when 45,000 more teachers were certified than in 1968, representing a 19.1 percent increase. Increases over the previous year during this period ranged from 4.4 percent to 19.1 percent with an average increase over the nine year period (1959-68) of 7.5 percent. If it were assumed that the increase would continue at this rate, this would mean an increase of about 20,000 certified graduates each year, or 323,700 certified graduates by 1971.

However, Office of Education projections indicate a sharp decline in the number of education graduates over the next year and then a stabilization. It was estimated that there would be fewer education graduates in 1970 than in 1969 and that the increase from 1970-71 would only be about one percent. Then a gradual increase would occur each year until 1978 when 157,050 education majors would be graduated, an increase of 0.4 percent. Based on the above figures the demand for additional teachers declines from 203,000 in 1969 to 168,000 in 1973.

Table 4

GRADUATES CERTIFIED TO TEACH

| Year | Education Certificates[1] | Change | % of Change | Education Graduates[2] | Change | % of Change |
|---|---|---|---|---|---|---|
| 1958 | 114,411 | | | 65,060 | | |
| 59 | 119,421 | 5,010 | 4.4 | 69,515 | 4,455 | 6.8 |
| 60 | 130,203 | 10,782 | 9.0 | 71,145 | 1,630 | 2.3 |
| 61 | 129,188 | - 1,015 | - .8 | 74,028 | 2,883 | 4.1 |
| 62 | 142,343 | 13,155 | 10.2 | 78,153 | 4,125 | 5.6 |
| 63 | 158,357 | 16,014 | 11.3 | 82,627 | 4,474 | 5.7 |
| 64 | 174,133 | 15,776 | 10.0 | 90,813 | 8,186 | 9.9 |
| 65 | 191,391 | 17,258 | 9.9 | 95,667 | 4,854 | 5.3 |
| 66 | 199,911 | 8,520 | 4.5 | 94,294 | -1,373 | -1.4 |
| 67 | 221,084 | 21,173 | 10.6 | 99,920[4] | 5,626 | 6.0 |
| 68 | 234,947 | 13,863 | 6.3 | 116,950[4] | 17,030 | 17.0 |
| 69 | 279,895[3] | 44,948[3] | 19.1 | 127,370[5] | 10,420 | 8.9 |
| 70 | | | | 126,101 | -1,360 | -1.1 |
| 71 | | | | 127,420 | 1,410 | 1.1 |
| 72 | | | | 130,750 | 3,330 | 2.6 |
| 73 | | | | 135,920 | 5,170 | 3.9 |
| 74 | | | | 141,600 | 5,680 | 4.2 |
| 75 | | | | 146,880 | 5,280 | 3.7 |
| 76 | | | | 151,130 | 5,000 | 3.4 |
| 77 | | | | 154,020 | 2,890 | 1.9 |
| 78 | | | | 157,050 | 3,030 | 2.0 |

1. NEA Research Division - Teacher Supply and Demand.
2. Office of Education - Projection of Educational Statistics to 1977-78.
3. Estimated by NEA
4. Estimated by USOE
5. Projected by USOE

## Estimates of Demand for New Public School Teachers: United States (in thousands)

| Years | Number of Teachers[1] | Teachers Change From Prev. Year | Percent Change | Trend Demand[2] | Reentry of Former Teachers | Trend Demand for Beginning Teachers[8] | Quality Criterion Demand[3] | Graduates Certified to Teach |
|---|---|---|---|---|---|---|---|---|
| 1957-58 | 1,259 | | | | 64,670 | | | 114 |
| 59 | 1,306 | 47 | 3.7 | | | | | 119 |
| 60 | 1,355 | 49 | 3.8 | | 60,215 | | 228 | 130 |
| 61 | 1,408 | 53 | 3.9 | | | | 230 | 129 |
| 62 | 1,461 | 53 | 3.8 | | | | 240 | 142 |
| 63 | 1,508 | 47 | 3.2 | | | | 240 | 158 |
| 64 | 1,578 | 70 | 4.6 | 191 | 76,852 | 114 | 235 | 174 |
| 65 | 1,648 | 70 | 4.4 | 197 | 60,776 | 136 | 248 | 191 |
| 66 | 1,711 | 63 | 3.8 | 194 | 51[7] | 143 | 285 | 200 |
| 67 | 1,789 | 78 | 4.6 | 216 | 54[7] | 162 | 366[6] | 221 |
| 68 | 1,855[4] | 66[4] | 3.7 | 209 | 56 | 153 | 384 | 230 |
| 69 | 1,910[5] | 55[5] | 3.0 | 203[5] | 57 | 146 | 500 | 280[4] |
| 70 | 1,942 | 32 | 1.7 | 185 | 58 | 127 | | |
| 71 | 1,968 | 26 | 1.3 | 181 | 59 | 122 | | |
| 72 | 1,985 | 17 | .9 | 174 | 60 | 114 | | |
| 73 | 1,994 | 9 | .5 | 168 | 60 | 108 | | |
| 74 | 2,006 | 12 | .6 | 172 | 60 | 112 | | |
| 75 | 2,014 | 12 | .6 | 168 | 60 | 106 | | |
| 76 | 2,024 | 10 | .5 | 171 | 61 | 110 | | |
| 77 | 2,035 | 11 | .5 | 173 | 61 | 112 | | |
| 78 | 2,044 | 9 | .4 | 172 | 61 | 111 | | |

1. Projections of Educational Statistics to 1977-78(1968Ed.)Office of Education, U.S.Dept.HEW, p. 47.
2. " " " " " " " " " " " , p. 51.
3. NEA Research Reports - Teacher Supply and Demand
4. Preliminary Data - Estimated
5. Projected.
6. Change in Definition of demand.
7. Estimated at rate of 6% per year.
8. Trend demand minus reentry of former teachers.

tion, as positions become more difficult to obtain.

## VI. IMPACT OF FEDERAL FUNDING

The impact of Federal monies should be stressed. Large expenditures such as those devoted to the Aero-Space Program for specific purposes can dramatically influence the economy and the labor supply. The withdrawal of such funds will adversely affect specific areas of employment. The apparent surplus of Ph.D's in the areas of physics is an example of what can occur when Federal funds are withdrawn from an area which was artificially stimulated several years earlier by the same funds.

During the Johnson administration, several significant educational programs were initiated. The NEA Research Division (1966e) used USOE projections to estimate that 50,000 additional teachers would be required in 1966-67 because of the Elementary and Secondary Education Act of 1965. If such programs are not expanded, shortages are quickly alleviated over a period of a few years, often with uncertified teachers, many of whom return to college and complete certification. The curtailment of funding initiated by Johnson may have aggravated the supply problem by attracting many individuals into the profession and then eliminating, rather than expanding programs. With the recent tight money policy of the Nixon administration, it seems unlikely these extensive new programs will be developed. Consequently, it seems unlikely that new teachers will be absorbed by increased Federal spending. Ironically, recent programs, such as the Education Professions Development Act, may aggreviate the problem by providing even larger numbers of prospective teachers.

## STATE-WIDE IMPLICATIONS

### I. INTRODUCTION

The supply of teachers in the State is consistent with the national trends in teacher preparation and demand. The same general considerations influencing teacher demand at the national level are again relevant. In this section trends in births, enrollment, certified graduates and classroom teachers were examined. The impact of private school enrollments and graduates certified in specific curriculum areas were additional variables considered at the state level.

### II. LIMITATIONS ON RELIABILITY OF DATA

Although State figures are probably more accurate than national figures, a substantial amount of error exists in information provided on the State level. For example, data reported for the same year from the same source (New York State Statistical Yearbook) but different yearbooks, yield diverse results. For example:

| | 1960 | 1961 | 1962 | 1963 | 1964 |
|---|---|---|---|---|---|
| Total Professional Positions (1967 Yearbook) | 134,749 | 140,806 | 148,291 | 155,843 | 162,408 |
| Total Professional Positions (1970 Yearbook) | 134,777 | 138,613 | 146,193 | 153,406 | 161,475 |
| Classroom Teachers (1967 Yearbook) | 120,469 | 125,934 | 132,600 | 140,257 | 146,198 |
| Classroom Teachers (1970 Yearbook) | 117,956 | 121,976 | 128,047 | 134,456 | 140,890 |

Note that differences vary from 29 in 1960 to 2,193 in 1961 for "Total Professional Positions" and from 2,513 in 1960 to 5,308 in 1964 for "Classroom Teachers." Evidently there is considerable general error which is probably confounded by a change in definition of classroom teacher, which is not referenced in either source. The difference in attempting to derive trends is staggering, because in 1965, the 1967 Yearbook stated that the number of teachers was 145,554, which would represent a decline in the number of teachers by 611 or 0.4 percent. Whereas, if the 1970 Yearbook is used, the number of teachers in 1965 was 146,441, which would represent an increase of 5,551 or 3.9 percent. For the purpose of this report, the 1970 Yearbook will be used.

## III. CLASSROOM TEACHER AND ENROLLMENT TRENDS

Although the general State-wide trend shows a constant increase in the number of practicing classroom teachers, the rate of increase is declining. For example, in 1966, (see Table 6), there were 158,074 classroom teachers in the State, compared to 146,441 in 1965, a 7.9 percent increase. This increase, the largest in the last 12 years, was followed by an increase of 4.8 percent in 1967 and a 1968 increase of only 2.5 percent. In 1969, an upward swing occurred with a 3.7 percent increase, but this dropped to a 12 year low of one percent in 1970. Fall enrollments have remained more consistent. In 1958, 2,623,278 students were enrolled in the public schools. By 1970, enrollment increased to 3,477,007. The percent change from previous year in enrollments has varied from a 3.4 percent change in 1962, to one percent in 1970. Only 34,191 additional students enrolled in the State in 1970, compared to 55,000 to 98,000 in previous years.

The rate of increase of teachers has been consistently higher than

Table 6

PUBLIC SCHOOL ENROLLMENT, CLASSROOM TEACHERS AND EDUCATION GRADUATES IN NEW YORK STATE - 1958-1969

| Year | Fall Enrollment[1] | Change from Previous Year | % Change | Class-room Teachers[2] | Change from Prev. Year | % Change | Student Teacher ratio | Graduates Certified to Teach[3] | Change from Prev. Year | % Change |
|---|---|---|---|---|---|---|---|---|---|---|
| 1958-59 | 2,623,278[4] | | | 112,103[5] | | | 23.4 | 8,868 | 600 | 7.3 |
| 1959-60 | 2,697,676[4] | 74,398 | 2.8 | 115,754[5] | 3,651 | 3.3 | 24.1 | 9,599 | 713 | 8.0 |
| 1960-61 | 2,770,824[4] | 73,148 | 2.7 | 117,956 | 2,202 | 1.9 | 23.5 | 7,470 | -2,129 | -22.2 |
| 1961-62 | 2,862,824 | 92,000 | 3.3 | 121,976 | 4,020 | 3.4 | 23.5 | 10,303 | 2,833 | 37.9 |
| 1962-63 | 2,960,568 | 97,744 | 3.4 | 128,047 | 6,071 | 5.0 | 23.1 | 11,916 | 1,613 | 15.7 |
| 1963-64 | 3,051,006 | 90,438 | 3.1 | 134,456 | 6,409 | 5.0 | 22.7 | 13,706 | 1,790 | 15.0 |
| 1964-65 | 3,121,717 | 70,711 | .2.3 | 140,890 | 6,434 | 4.8 | 22.2 | 15,501 | 1,795 | 13.1 |
| 1965-66 | 3,176,574 | 54,857 | 1.8 | 146,441, | 5,551 | 3.9 | 21.7 | 17,148 | 1,647 | 10.6 |
| 1966-67 | 3,248,879 | 72,305 | 2.3 | 158,074 | 11,633 | 7.9 | 20.6 | 16,262 | - 886 | - 5.2 |
| 1967-68 | 3,325,477 | 76,598 | 2.4 | 166,062 | 7,988 | 4.8 | 20.0 | 20,186 | 3,924 | 24.1 |
| 1968-69 | 3,397,413 | 71,936 | 2.2 | 170,147 | 4,085 | 2.5 | 20.0 | 31,132[7] | 10,946 | 54.2 |
| 1969-70 | 3,442,809[6] | 45,396 | 1.3 | 176,385[6] | 6,238 | 3.7 | 19.5 | | | |
| 1970-71 | 3,477,000[7] | 34,191 | 1.0 | 178,135[7] | 1,750 | 1.0 | 19.4 | | | |

1. New York State Statistical Yearbook 1970 (p. 202) Public Schools.
2. Ibid. (p. 204)
3. Teacher Supply and Demand in Public Schools (1959-70). NEA Research Division: Number of Students Completing Preparation for Standard Teaching Certificates (Elementary and Secondary). Includes Master's Degrees.
4. New York State Statistical Yearbook 1967 (p.99).
5. Ibid. (p. 102)
6. Education Statistics Estimates, Fall 1970, State Education Department.
7. Estimated.

the rate increase of students until 1970, when both rates were the same. Since 1959 the student-teacher ratio has been reduced from 24.1 to 1 to 19.4 to 1 in 1970. This has occurred through a gradual decline over the past eleven years. Only one year, 1959, yielded an increase in the student-teacher ratio.

Smaller increases in public school enrollment for the last two years correspond to the reduced number of births in 1964 and 1965. (see Table 7) During the past 13 years, since 1947, the trend in births in New York State has changed from a fairly stable period between 1947 and 1961, when 359,000 to 362,000 children were born each year, to a gradual decline from 1962 to 1964, when 351,000 to 356,000 children were born each year, to a rapid decline from 1965 to 1969 when the births decreased from 336,000 to 302,000. Since the trend in number of births continued downward through 1968, increasing only slightly in 1969, smaller increases in enrollment should be anticipated for at least the next four years, providing there is no change in private school enrollment. Thus, fewer teachers will be needed to meet the demands of increased enrollment. In fact, only 1,750 additional teachers were hired in 1970.

## IV. COLLEGE GRADUATES

As was discovered on the national level, determination of the number of potential teacher graduates is difficult. Table 7 presents three different ways of viewing the problem. Neither the category entitled "Education Degrees," which include graduate degrees, nor "Education Degrees - General Teaching" seem to provide an accurate picture. Thus, the NEA statistics regarding the number of "Graduates Certified to Teach" were again utilized to determine trends in the supply of teachers.

As indicated in Table 6, the number of graduates certified to teach

Table 7

BIRTHS AND COLLEGE DEGREES: NEW YORK STATE (in thousands)

| Year | Births[1] | Earned Degrees[2] (Includes Grad. Degrees) | Education Degrees[3] (Includes Grad. Degrees) | Graduates Certified to Teach[4] | Education Degrees General Teaching[5] |
|---|---|---|---|---|---|
| 1956-57 | 359 | | | | |
| 1957-58 | 360 | | | 8 | |
| 1958-59 | 361 | 51 | 12 | 9 | |
| 1959-60 | 359 | 51 | 12 | 10 | |
| 1960-61 | 362 | 52 | 12 | 7 | |
| 1961-62 | 354 | 54 | 12 | 10 | 5 |
| 1962-63 | 356 | 59 | 13 | 12 | 6 |
| 1963-64 | 351 | 64 | 14 | 14 | 6 |
| 1964-65 | 336 | 69 | 15 | 16 | 6 |
| 1965-66 | 321 | 74 | 15 | 17 | 6 |
| 1966-67 | 309 | 80 | 16 | 16 | 7 |
| 1967-68 | 302[7] | 88 | 17 | 20 | 7 |
| 1968-69 | 312 | | | 31[6] | |

1. New York State Statistical Yearbook: 1970, p. 58.
2. Ibid., (p. 215), Bachelor's and Higher Degrees.
3. Ibid., (p. 215), Bachelor's and Higher Degrees.
4. Teacher Supply and Demand in Public Schools NEA Research Division Reports (1959 through 1970): Number of Students Completing Preparation of Standard Teaching Certificates (Elementary and Secondary). Includes Master's Degrees.
5. College and University Degrees Conferred 1968-69, State Education Department. "Bachelor's and First Professional Degrees Conferred."
6. Estimated by NEA.
7. Statistical Abstracts of the United States, 1970.

in New York State has increased steadily since 1959. During the late 1950's and early 1960's the number of certified graduates was fairly stable, ranging from 8,868 in 1960 to 10,303 in 1961. However, the numbers increased more rapidly in subsequent years to an estimated 31,132 in 1969. This last figure represented a 54.2 percent increase over the preceding year and may be an overestimate. Although State-wide information is not available for 1970 graduates, the State University granted 14,003 bachelor's degrees, of which 7,255 were candidates for certification in education. It would appear that no decline in the number of certified graduates has occurred.

The stabilization in public school enrollments has decreased the demand for new teachers, which should lead to an excess supply of available teachers. When data in Table 6 are compared to those in Table 5, it becomes evident that the rate of increase of certified graduates in New York State is far greater than on the national level. When 1969 graduates are compared to those in 1968, the rate of increase on the national level is 19.1 percent, while on the State level it is 54.2 percent. Estimated figures for 1969 show that New York State trained approximately 31,000 of the 280,000 newly certified teachers, or more than 11 percent of the national total. This represents 21 percent of the estimated demand for beginning teachers in the entire country for 1969.

Gross judgments can be made concerning the oversupply of teachers when the number of certified graduates is compared to the number of additional teachers employed in 1969 in the State, initially it appears that 5 times more graduates were available than were needed. However, the following factors should also be considered:

1) Within State Employment: Based on estimates from follow-up studies of graduates since 1965 (See Table 8) it appears that approximately 64 percent of newly certified graduates begin teaching within the State. On this basis, in 1969, 19,840 of the 31,000 certified graduates could be expected to remain in New York State.

2) Turnover: If it is assumed that the State has the same 8 percent turnover rate as the nation, an additional 13,612 teachers would be needed. However, on a national level approximately 3 percent of the total number of teachers are selected from individuals who reenter the profession. Consequently, it could be estimated that approximately 8,320 new graduates and 5,292 returning teachers would be employed to replace those individuals who left the profession.

3) New Positions: Program expansion and increases in enrollment create a demand for new positions. In September 1969, 6,238 new positions were created.

Taking these factors into account, 27 percent of the available positions would be filled by returnees. Consequently it would be estimated that the surplus of certified education graduates in New York State in 1969 was approximately 5,300. It should be reemphasized that many estimates are being utilized and this figure could be grossly inaccurate. However, despite the apparent inaccuracies, it seems apparent that the situation is becoming worse. In 1970, the number of new teacher positions in the State increased by only 1,750. If the factors discussed above remain constant, the excess number of newly certified teachers will rise to approximately 10,200. Again, it must be stressed that the figure is subject to the limitatic

Table 8

FOLLOW-UP OF NEW YORK STATE CERTIFIED GRADUATES[1]

| Year | Percent Teaching | | Percent in State | | Percent out of State | |
|---|---|---|---|---|---|---|
| | Elementary | Secondary | Elementary | Secondary | Elementary | Secondary |
| 1965 | 77.4 | 55.7 | 70.8 | 51.3 | 6.6 | 4.4 |
| 1966 | 80.0 | 66.9 | 72.3 | 59.9 | 7.7 | 7.0 |
| 1967 | 82.2 | 62.0 | 75.0 | 55.9 | 7.3 | 6.1 |
| 1968 | 75.2 | 60.6 | 68.2 | 55.7 | 7.1 | 4.9 |
| 1969 (not available)* | | | | | | |

1. NEA Research Division Reports - Teacher Supply and Demand (1966-1969).

* - New York did not report.

of the estimates on which it is based. Unfortunately, however, complete data are not available for 1970 at the present time.

## V. SPECIFIC CURRICULUM AREAS

Table 9 provides descriptive data concerning certified graduates in New York State by specific curriculum areas. The rate of increase from 1968-69 in secondary education of 60.2 percent is more rapid than in elementary or in exceptional education which increased 48 and 48.9 percent respectively. These substantial increases reflect the extensive expansion of higher education in New York State, particularly in the sector of public higher education. Since detailed information on placement is not available by curriculum areas, it is impossible to specify which areas are training an excess number of teachers. However, if national trends are projected to the State level, an adequate supply of teachers in Art, English, Foreign Language (Secondary), Business Education, Music (Secondary), Physical Education (Male-Secondary), and Social Studies probably exists. If present rates of increase continue, or indeed, if they stabilize at the present level, a large oversupply of teachers will develop, particularly in the itemized areas.

## VI. MINIMUM QUALITY CRITERION

An examination of the data presented in Table 10 indicates that during the current year a declining number of first year teachers were employed throughout the State. This occurred in 7 of the 9 regions outside of New York City, with an average decrease of approximately three percent. The percentage of uncertified teachers in New York State decreased from 10.4 percent in 1967-68 to 6.7 percent in 1969-70. Figures for specific regions in the State are presented in Table 11. Although information was not available for the current year, it could be assumed that the trend has continued,

Table 9

NEW YORK STATE EDUCATION GRADUATES - BY CURRICULUM[1]

| | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69* |
|---|---|---|---|---|---|---|---|---|---|---|
| Secondary School Total | | | | | | | 8,841 | 8,240 | 10,289 | 16,485 |
| Change | | | | | | | | - 759 | 2,049 | 6,196 |
| % of Change | | | | | | | | - 8.9 | 24.9 | 60.2 |
| Art Total | 366 | 233 | 408 | 467 | 469 | 519 | 417 | 396 | 738 | 1,119 |
| Change | | -143 | 175 | 59 | 2 | 50 | -102 | - 21 | 342 | 381 |
| % of Change | | - 39.1 | 75.1 | 14.5 | 0.4 | 10.7 | - 19.7 | - 5.0 | 86.4 | 51.6 |
| English Language Arts Total | 598 | 465 | 723 | 969 | 1,141 | 1,324 | 1,753 | 1,760 | 2,226 | 3,889 |
| Change | | -133 | 258 | 246 | 172 | 183 | 429 | 7 | 466 | 1,663 |
| % of Change | | - 22.2 | 55.5 | 34 | 7.8 | 16 | 32.4 | 0.4 | 26.5 | 74.7 |
| Foreign Languages Total | 224 | 207 | 304 | 422 | 534 | 668 | 804 | 1,010 | 960 | 1,566 |
| Change | | - 17 | 97 | 118 | 112 | 134 | 136 | 206 | - 50 | 606 |
| % of Change | | - 7.6 | 46.9 | 38.8 | 26.5 | 25.1 | 20.4 | 25.6 | - 5.0 | 63.1 |
| Home Economics Total | 235 | 181 | 212 | 256 | 242 | 240 | 119 | 283 | 434 | 564 |
| Change | | - 54 | 31 | 44 | - 14 | - 2 | - 121 | 164 | 151 | 130 |
| % of Change | | - 23 | 17.1 | 20.8 | - 5.5 | - 0.8 | - 50.4 | 137.8 | 53.4 | 30 |
| Industrial Arts Total | 295 | 187 | 237 | 297 | 276 | 261 | 85 | 205 | 472 | 646 |
| Change | | -108 | 50 | 60 | - 21 | - 15 | - 176 | 120 | 267 | 174 |
| % of Change | | - 36.6 | 26.7 | 25.3 | - 7.6 | - 5.4 | - 67.4 | 141.2 | 130.2 | 36.9 |

1. First certification, including Master's Degrees, Teacher Supply and Demand in Public Schools, NEA Research Division Reports - 1961 through 1970.

(Table 9 - continued next page)

* - Estimated.

Table 9 (cont'd)

NEW YORK STATE EDUCATION GRADUATES - BY CURRICULUM[1]

| | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69* |
|---|---|---|---|---|---|---|---|---|---|---|
| Elementary - Total | 4,811 | 3,560 | 4,629 | 5,129 | 6,318 | 6,883 | 8,667 | 8,022 | 9,897 | 14,647 |
| Change | | -1,251 | 1,069 | 500 | 1,189 | - 565 | 1,784 | - 355 | 1,875 | 4,750 |
| % of Change | | - 35.1 | 23.1 | 9.7 | 18.8 | 8.2 | 20.6 | 4.4 | 19 | 48 |
| Mathematics - Total | 320 | 322 | 476 | 648 | 693 | 736 | 920 | 789 | 985 | 1,532 |
| Change | | 2 | 154 | 172 | 45 | 43 | 184 | - 131 | 196 | 547 |
| % of Change | | 0.62 | 47.8 | 36.1 | 6.9 | 6.2 | 25 | 14.2 | 24.8 | 55.5 |
| Natural & Physical Science - Total | | | | | | | 869 | 854 | 769 | 1,324 |
| Change | | | | | | | | - 15 | - 85 | 555 |
| % of Change | | | | | | | | - 1.7 | - 10 | 72.2 |
| Social Studies - Total | 712 | 549 | 676 | 998 | 1,320 | 1,643 | 1,998 | 1,624 | 1,956 | 3,264 |
| Change | | - 163 | 127 | 322 | 322 | 323 | 355 | - 374 | 332 | 1,308 |
| % of Change | | 22.9 | 23.1 | 47.6 | 32.3 | 24.5 | 21.6 | - 18.7 | 20.4 | 66.9 |
| Trade, Industry, Tech. - Total | | | | | | | | | 87 | 120 |
| Change | | | | | | | | | | 33 |
| % of Change | | | | | | | | | | 37.9 |
| Special Education - Total | | | | | | | 456 | 394 | 900 | 1,340 |
| Change | | | | | | | | - 62 | 506 | 440 |
| % of Change | | | | | | | | 13.6 | 128.4 | 48.9 |

1. First certification, including Master's Degrees,
Teacher Supply and Demand in Public Schools,
NEA Research Division Reports - 1961 through 1970.

* - Estimated.

Table 10

Percentage of First Year Teachers in New York State by Region

| Region | 1968-69 | 1969-70 | Difference |
|---|---|---|---|
| Syracuse | 20.7 | 17.5 | -3.2 |
| Long Island | 17.4 | 15.8 | -1.6 |
| Mohawk Valley | 18.4 | 14.3 | -4.1 |
| Rochester | 20.6 | 17.9 | -2.7 |
| Capital District | 18.7 | N.A. | --- |
| Northern | 16.2 | 16.2 | 0 |
| Binghamton | 17.0 | 14.7 | -2.3 |
| Rockland-Westchester | 20.7 | 17.7 | -3.0 |
| Buffalo | 17.2 | 13.3 | -3.9 |

Table 11

Percent of Non-Certified Teachers by Region

| Area | 1967-68 | 1969-70 |
|---|---|---|
| Total New York State | 10.4 | 6.7 |
| Binghamton | 14.5 | 9.7 |
| Buffalo | 13.2 | 4.9 |
| Elmira | 15.9 | 9.9 |
| Long Island | 9.3 | 5.6 |
| Mid-Hudson | 15.2 | 10.1 |
| Mohawk Valley | 17.4 | 12.7 |
| Northern | 14.7 | 10.9 |
| Rochester | 13.3 | 7.9 |
| Rockland-Westchester | 10.2 | 6.1 |
| Syracuse | 13.2 | 8.5 |
| New York City | 6.1 | 5.2 |

"Teacher Supply and Demand: National, State and Local," by R. Spencer and F. Dunn, SUC at Oswego, 1970.

due to the availability of a larger pool of certified graduates and the easing of certification requirements.

In the section which discussed national trends, it was concluded that the available supply of new teachers could be absorbed through 1976. However, data presented in Tables 6 and 11 indicate that when factors such as student-teacher ratio and certification status are used as evaluative criteria, public schools in New York State are relatively close to attaining the minimum quality criterion described by the NEA. Consequently, the anticipated surplus would have to be absorbed by improving programs beyond the minimum quality criterion. Unfortunately, the depressed economy and the recently demonstrated reluctance for taxpayers to support school budgets makes it seem unlikely that substantial improvements will occur in public schools within the State.

## VII. NON-PUBLIC SCHOOL ENROLLMENT

The population of the non-public schools in the State is a variable which seemed less important on the national level. Non-public school enrollment represents about 20 percent of the school population in the State, while at the national level, it represents only 12 percent of the total. Although there has been a general decline in public school enrollment at the national level, the decline has been more apparent in the State. Non-public school enrollment has declined from 891,146 (21.5 percent of the total) in 1966 to 807,000 (18.8 percent of the total) in 1970 (Table 12). It seems likely that the decreasing number of births in the State was a contributory factor. Increases in operating expenses have forced some non-public schools to close, while other schools have raised tuition. The latter factor, when combined with recent increases in the cost of living and the depressed rate of economic growth, has no doubt caused many families

to withdraw their children from non-public institutions and enroll them in public schools.

Fluctuations in the number of non-public school students represent a significant variable in relation to public school enrollments. In 1969, for example, enrollments in non-public schools decreased by 31,339, while those in public schools increased by 45,396, a difference of only 14,063. In relation to these figures two points should be observed. First, despite the declining birthrates, the rate of increase of public school enrollments in the State since 1966 has been maintained by the growning number of transfer students from the non-public schools. Second, an increasing number of non-public school teachers will be forced to seek positions in public schools, which may aggreviate the apparent oversupply of teachers.

The influx of students into the public schools should increase the demand for teachers in large city systems where non-public school enrollment is dropping. The decline in enrollment would seem to necessitate a decline in number of teachers in the non-public schools. However, this had not occurred by 1968 (latest available statistics on non-public school teachers). Rather than reducing the number of teachers while the student population was declining, the non-public schools increased the number of teachers and lowered their student-teacher ratio from 30.7 to 1 in 1966 to 26.9 to 1 in 1968. It could also be assumed that the number of non-certified teachers would be reduced. It is unlikely, however, that this trend continued through 1970, as enrollment in non-public schools dropped sharply in the fall of 1969 and 1970.

Table 12

NON-PUBLIC SCHOOL ENROLLMENT AND CLASSROOM TEACHERS IN NEW YORK STATE

| Year | Fall[1] Enrollment | Change From Prev.Year | % Change | Classroom[2] Teachers | % Change | Student Teacher Ratio |
|---|---|---|---|---|---|---|
| 1957-58 | 749,200 | | | | | |
| 1960-61 | 830,000 | | | | | |
| 1961-62 | 847,600 | +17,600 | +2.1 | | | |
| 1965-66 | 891,146 | | | 29,069 | | 30.7 |
| 1966-67 | 884,111 | - 7,035 | -0.8 | 29,761 | +2.4 | 29.5 |
| 1967-68 | 872,717 | -11,394 | -1.3 | 32,442 | +9.0 | 26.9 |
| 1968-69 | 841,378 | -31,339 | -3.6 | | | |
| 1969-70 | 807,000[3] | -34,378 | -4.1 | | | |

1. Survey of Non-public Schools, The State Education Department
2. Full Time Classroom Teachers.
3. Estimated by the State Education Department

## LOCAL IMPLICATIONS

### I. INTRODUCTION

The status of teacher supply on the Niagara Frontier, follows the national and State trends, with the same variables affecting the extent to which information is available. The following analysis was directed toward Erie and Niagara Counties and graduates of State University College at Buffalo.

### II. ENROLLMENT TRENDS

The number of public school students in Erie and Niagara Counties have increased slowly for the last two years, corresponding to State and national trends. (See Table 13). Since 1960, the largest growth occurred during 1961-62 when 8,000 or 4.7 percent, more students entered Erie County Schools. In 1969, a percentage increase over the preceding year of 1.9 percent occurred in Erie County, the smallest in the 1960's. For Niagara County, the growth rate was more gradual, with the highest rate of increase of 2.8 percent occuring in 1960 and the lowest, 0.23 percent, in 1969. The decrease in 1969 included 131 fewer students over the 1948 enrollment. The rate of growth in Erie County is comparable to the entire State, while Niagara County is increasing more slowly.

The number of teachers in Erie and Niagara Counties has also been increasing gradually since 1966. However, only 38 new positions were available in 1969. This represents an 0.4 percent increase. Niagara County employed 10 fewer teachers in 1969 than in 1968. This represents a decline of 0.4 percent. Since fewer teachers were hired, the student-teacher ratio increased slightly in 1969 for both counties. In 1969 the student-teacher ratio in Erie (21.1 to 1) and in Niagara Counties (20.5 to 1)

were similar to, but slightly higher than, the State figure of 19.5.

Non-public school employment represents another factor which could affect both teacher supply and student enrollment. In 1968, there were 73,903 non-public school students in Erie County and 8,395 in Niagara County. This represents a 27 and 13.6 percent of the total enrollment in Erie and Niagara Counties respectively. The decline in non-public school enrollments appears to be more rapid than decline at the State level (1.3 percent), as there was a 4.5 percent decrease in Erie County and a 5.8 percent decrease in Niagara County from 1967 to 1968, the only years for which this information is available.

The elimination of private schools may effect the supply of teachers. Confronted with inflation and continual tuition hikes, parents of private school pupils may place their children in public schools. In the Diocese of Buffalo, the estimated total enrollment in parochial schools dropped from 100,000 to 75,000 from 1966 to 1970. Dwindling student enrollments will force many private school teachers to seek jobs in public schools.

## III. COLLEGE GRADUATES

State University College at Buffalo graduates who majored in education have increased more rapidly than enrollments in the public schools. During the year period from 1966 to 1970, Elementary Education graduates increased 40 percent from 1967 to 1968, remained relatively consistent through 1969 and increased by 17 percent in 1970. (See Table 14). Data on Secondary Education graduates, a category which includes Art Education, Industrial Arts, Physical and Social Sciences, Languages, Home Economics, Vocational-Technical, and Mathematics, shows an increase from 289 to 474 from 1966 to 1967 and a gradual increase through 1970. The largest percentage increases

Table 14

STATE UNIVERSITY COLLEGE GRADUATES - BY CURRICULUM

| | 66* | 67 | 68 | 69 | 70 ... |
|---|---|---|---|---|---|
| Elementary School-Total (Regular Instruction) | 244 | 299 | 421 | 454 | 533 |
| Change | | 55 | 122 | 33 | 79 |
| % of Change | | 22.5 | 40.8 | 7.8 | 17.4 |
| Secondary School-Total (Incl.Art,IA,Secondary, Voc.Tech.,Home Econ.) | 289 | 474 | 522 | 556 | 597 |
| Change | | 185 | 48 | 34 | 41 |
| % of Change | | 64.0 | 10.1 | 6.5 | 7.4 |
| Art-Total | 73 | 117 | 119 | 103 | 113 |
| Change | | 44 | 2 | 16 | 10 |
| % of Change | | 60.3 | 1.7 | 13.4 | 9.7 |
| English Language Arts-Total | 27 | 52 | 71 | 69 | 63 |
| Change | | 25 | 19 | - 2 | - 6 |
| % of Change | | 92.6 | 36.5 | - 2.8 | - 8.7 |
| Foreign Languages-Total | | 5 | 14 | 20 | 16 |
| Change | | | 9 | 6 | 4 |
| % of Change | | | 180 | 42.9 | 20 |
| Home Economics-Total | 55 | 64 | 73 | 71 | 81 |
| Change | | 9 | 9 | - 2 | 10 |
| % of Change | | 16.4 | 14.1 | - 2.7 | 14.1 |
| Industrial Arts-Total | 54 | 93 | 100 | 140 | 150 |
| Change | | 39 | 7 | 40 | 10 |
| % of Change | | 72.2 | 7.5 | 40 | 7.1 |
| Mathematics-Total | 12 | 38 | 26 | 40 | 27 |
| Change | | 26 | - 12 | 14 | 13 |
| % of Change | | 216.7 | | | 32.5 |
| Natural & Physical Science-Total (Biology,Chemistry,Physics, Earth Science) | 33 | 34 | 35 | 38 | 26 |
| Change | | 1 | 1 | 3 | 12 |
| % of Change | | 3.0 | 2.9 | 8.6 | - 31.6 |

(Continued next page)

Table 14 (cont'd)

STATE UNIVERSITY COLLEGE GRADUATES - BY CURRICULUM

| | 66* | 67 | 68 | 69 | 70 |
|---|---|---|---|---|---|
| Social Studies-Total | 33 | 48 | 57 | 75 | 75 |
| Change | | 51 | 9 | 18 | 0 |
| % of Change | | 45.4 | 18.8 | 31.6 | 0 |
| Trade, Industry, Voc. Tech.-Total | 9 | 23 | 18 | 30 | 46 |
| Change | | 14 | - 5 | 12 | 16 |
| % of Change | | 155.6 | - 21.7 | 66.7 | 53.3 |
| Special Education-Total | 86 | 134 | 130 | 170 | 191 |
| Change | | 48 | - 4 | 40 | 21 |
| % of Change | | 55.8 | 3.0 | 30.8 | 12.4 |
| Total Ed. Grad. (Elem. & Secondary)-Total | 533 | 772 | 943 | 1,010 | 1,130 |
| Change | | 240 | 170 | 67 | 120 |
| % of Change | | 45.0 | 22.0 | 7.1 | 11.9 |

Elementary - Secondary & Exceptional Education- 1,321

* - Each year includes graduates for an entire year (e.g., August 1965, January 1966, & June 1966).
Soutce: Placement Office (SUCB)

between 1966 and 1967 were in English, Industrial Arts, Mathematics, and Vocational-Technical. The number of English graduates has since declined slightly. Mathematics has varied from 26 to 40 graduates since 1967. Vocation-Technical and Industrial Arts graduates have increased since 1967. Special Education graduates increased by 56 percent in 1967, from 86 to 134, dropped slightly to 130 in 1968, increased to 170 in 1969, and to 191 in 1970.

A comparison of New York State Elementary and Secondary Education graduates with State University College at Buffalo Elementary and Secondary Education graduates for the 1967-69 period shows a consistent upward trend in percentage increase of New York State graduates, but a less rapid growth at State University College at Buffalo. State information for 1969 is based on an estimate and since State estimates have deviated as much as 3,000 in the past, this may be an inaccurate picture. However, the rate of growth at SUCB is more stable than the rest of the State.

## IV. FOLLOWUP REPORT ON GRADUATES

Follow-up data for SUC at Buffalo reveal that graduates are finding it increasingly more difficult to obtain positions in education. (See Table 15). For example, in Elementary Education between 1966 and 1970, the percentage of individuals who were placed in teaching positions declined from 83.6 percent to 61.8 percent. For a three year period from 1966 through 1968, none of the graduates in Elementary Education reported that they were available for placement. In 1969 seven or 1.6 percent of the graduates were available, while in 1970 thirty-five or 7.0 percent were in this category. In 1970 the percent of graduates who indicated they were available for placement ranged from 4.3 percent in Exceptional Education to



9.4 percent in Industrial Arts.

This percentage may be somewhat deceptive, since the number of graduates who were classified as "Other" has increased dramatically in recent years. For example, in 1966 only 2.9 percent of the graduates in Elementary Education fell into this categroy. In 1970, however, 111 graduates or 22.2 percent were classified as "Other." In 1966 the percentage of graduates classified as "Other" ranged from 1.2 percent in Exceptional Education to 6.8 percent in Art Education. By 1970 the same category ranged from 15.9 for graduates in the Caudell Division to 26.9 percent in Exceptional Education. One major reason for this increase in the "Other" category is that only one follow-up is currently available for the class of 1970.

The large percentage of 1970 graduates in this category makes it difficult to compare the current year to previous years. Although many of these individuals may be unemployed or available for employment, without additional evidence, no judgment can be made concerning their status. It should be noted that liberal arts graduates seemed less successful, when employment and post-graduate education were used as criteria. For example, 71.5 percent of Elementary Education graduates in June, 1970, who registered for placement either obtained teaching positions, other employment, continued their education, or entered military service. Only 61.8 percent of the June, 1970, Liberal Arts graduates were located in these categories. Consequently, although it could be concluded that competition for teaching positions has increased significantly, education may still offer excellent employment opportunities compared to other academic majors.

Table 15

Follow-up Information - SUCB Graduates

| | 1966 | 1967 | 1968 | 1969[a] | 1970[b] |
|---|---|---|---|---|---|
| Elementary Education(Graduates) | 244 | 299 | 421 | 443 | 500 |
| Teaching | 204 | 263 | 359 | 306 | 309 |
| Percent | 83.6 | 87.9 | 85.3 | 69.1 | 61.8 |
| Other Employment | - | 3 | 3 | 10 | 9 |
| Percent | - | 1.0 | 0.7 | 2.3 | 1.8 |
| Continuing Education | 16 | 17 | 33 | 35 | 24 |
| Percent | 6.6 | 5.7 | 7.8 | 7.9 | 4.8 |
| Marriage(not seeking emp.) | 17 | 12 | 17 | 13 | 9 |
| Percent | 7.0 | 4.0 | 4.0 | 2.9 | 1.8 |
| Military | - | 1 | 1 | 1 | 3 |
| Percent | - | 0.3 | 0.2 | 1.2 | 0.6 |
| Available | - | - | - | 7 | 35 |
| Percent | - | - | - | 1.6 | 7.0 |
| Other[c] | 7 | 6 | 11 | 71 | 111 |
| Percent | 2.9 | 2.0 | 2.6 | 16.0 | 22.2 |
| Secondary Education(Graduates) | 98 | 129 | 212 | 235 | 151 |
| Teaching | 73 | 92 | 157 | 154 | 92 |
| Percent | 74.5 | 71.3 | 74.1 | 65.5 | 60.9 |
| Other Employment | 2 | 9 | 9 | 12 | 2 |
| Percent | 2.0 | 7.0 | 4.2 | 5.1 | 1.3 |
| Continuing Education | 15 | 19 | 28 | 15 | 16 |
| Percent | 15.3 | 14.7 | 13.2 | 6.4 | 10.6 |
| Marriage(not seeking emp.) | 4 | - | 7 | 4 | 2 |
| Percent | 4.1 | - | 3.3 | 1.7 | 1.3 |
| Military | 1 | 3 | 6 | 3 | 3 |
| Percent | 1.0 | 2.3 | 2.8 | 1.3 | 2.0 |
| Available | - | - | - | 2 | 11 |
| Percent | - | - | - | 0.9 | 7.3 |
| Other[c] | 3 | 6 | 5 | 45 | 25 |
| Percent | 3.1 | 4.6 | 2.4 | 19.1 | 16.6 |
| Exceptional Education(Graduates) | 86 | 134 | 130 | 163 | 219 |
| Teaching | 73 | 111 | 102 | 102 | 135 |
| Percent | 84.9 | 82.8 | 78.5 | 62.6 | 61.6 |
| Other Employment | - | 1 | 2 | 2 | - |
| Percent | - | 0.7 | 1.5 | 1.2 | - |
| Continuing Education | 9 | 10 | 15 | 14 | 8 |
| Percent | 10.5 | 7.5 | 11.5 | 8.6 | 3.7 |
| Marriage(not seeking emp.) | 3 | 4 | 5 | 3 | 6 |
| Percent | 3.5 | 3.0 | 3.8 | 1.8 | 2.7 |



Table 15

Follow-up Information - SUCB Graduates

| | 1966 | 1967 | 1968 | 1969[a] | 1970[b] |
|---|---|---|---|---|---|
| Military | - | - | - | 1 | 2 |
| Percent | - | - | - | 0.6 | 0.9 |
| Available | - | - | - | 1 | 9 |
| Percent | - | - | - | 0.6 | 4.1 |
| Other[c] | 1 | 8 | 6 | 40 | 59 |
| Percent | 1.2 | 6.0 | 4.6 | 24.5 | 26.9 |
| Art Education(Graduates) | 73 | 117 | 119 | 102 | 139 |
| Teaching | 57 | 92 | 95 | 66 | 71 |
| Percent | 78.1 | 78.6 | 79.8 | 64.7 | 51.1 |
| Other Employment | - | 4 | 5 | 5 | 5 |
| Percent | - | 3.4 | 4.2 | 4.9 | 3.6 |
| Continuing Education | 10 | 10 | 8 | 9 | 2 |
| Percent | 13.7 | 8.5 | 6.7 | 8.8 | 1.4 |
| Marriage(not seeking emp.) | - | 2 | 4 | - | 3 |
| Percent | - | 1.7 | 3.4 | - | 2.2 |
| Military | 1 | - | - | 1 | 3 |
| Percent | 1.4 | - | - | 1.0 | 2.2 |
| Available | - | - | - | 1 | 11 |
| Percent | - | - | - | 1.0 | 7.9 |
| Other[c] | 5 | 9 | 7 | 20 | 44 |
| Percent | 6.8 | 7.7 | 5.9 | 19.6 | 21.6 |
| Caudell Division(Graduates) | 55 | 64 | 73 | 69 | 88 |
| Teaching | 39 | 50 | 58 | 50 | 50 |
| Percent | 70.9 | 78.1 | 79.4 | 72.5 | 56.8 |
| Other Employment | 3 | 4 | 6 | 4 | 2 |
| Percent | 5.5 | 6.2 | 8.2 | 5.8 | 2.3 |
| Continuing Education | 4 | - | 5 | 8 | 8 |
| Percent | 7.3 | - | 6.8 | 11.6 | 9.1 |
| Marriage(not seeking emp.) | 7 | 5 | 1 | 2 | 6 |
| Percent | 12.7 | 7.8 | 1.4 | 2.9 | 6.8 |
| Military | - | - | - | - | - |
| Percent | - | - | - | - | - |
| Available | - | - | - | 2 | 8 |
| Percent | - | - | - | 2.9 | 9.1 |
| Other[c] | 2 | 5 | 3 | 3 | 14 |
| Percent | 3.6 | 7.8 | 4.1 | 4.3 | 15.9 |
| Industrial Arts(Graduates) | 54 | 93 | 100 | 137 | 180 |
| Teaching | 30 | 52 | 76 | 93 | 82 |
| Percent | 55.6 | 55.9 | 76.0 | 67.9 | 45.6 |

Table 15

Follow-up Information - SUCB Graduates

| | 1966 | 1967 | 1968 | 1969[a] | 1970[b] |
|---|---|---|---|---|---|
| Other Employment | 4 | 7 | 6 | 6 | 12 |
| Percent | 7.4 | 7.5 | 6.0 | 4.4 | 6.7 |
| Continuing Education | 17 | 25 | 9 | 10 | 14 |
| Percent | 31.5 | 26.9 | 9.0 | 7.3 | 7.8 |
| Marriage(notseeking emp.) | - | - | - | - | 1 |
| Percent | - | - | - | - | |
| Military | 2 | 3 | 6 | 11 | 21 |
| Percent | 3.7 | 3.2 | 6.0 | 8.0 | 11.7 |
| Available | - | - | - | 1 | 17 |
| Percent | - | - | - | 0.7 | 9.4 |
| Other[c] | 1 | 5 | 3 | 16 | 33 |
| Percent | 1.8 | 5.4 | 3.0 | 11.7 | 18.3 |

a. Significant drop in number registered for placement.

b. As of October 24, 1970: This total includes some August '70 graduates, as a final - June graduation list is not available at this time.

c. "Other" includes individuals who did not register or who registered and did not respond, as well as all other categories, such as those who were deceased or those whose records were lost.

Enrollment Data - SUC at Buffalo

| DIVISION | FRESHMEN | | | SOPHMORE | | | JUNIOR | | | SENIOR | | | TOTALS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 6/69 | 1/70 | 9/70 | 9/69 | 1/70 | 9/70 | 9/69 | 1/70 | 9/70 | 9/69 | 1/70 | 9/70 | 9/69 | 1/70 | 9/70 |
| ARTS | 3 | 5 | 27 | 23 | 20 | 37 | 24 | 24 | 26 | 36 | 48 | 31 | 86 | 97 | 121 |
| ART EDUCATION | 163 | 168 | 171 | 208 | 184 | 182 | 151 | 140 | 192 | 128 | 129 | 160 | 650 | 621 | 705 |
| ELEMENTARY EDUCATION | 10 | 183 | 124 | 292 | 299 | 218 | 438 | 409 | 323 | 436 | 407 | 451 | 1176 | 1298 | 1116 |
| EXCEPTIONAL EDUCATION | 17 | 155 | 120 | 156 | 158 | 187 | 205 | 182 | 173 | 222 | 200 | 206 | 600 | 695 | 686 |
| CAUDELL | 3 | 49 | 66 | 85 | 94 | 90 | 118 | 101 | 158 | 112 | 118 | 121 | 318 | 362 | 435 |
| INDUSTRIAL ARTS | 106 | 112 | 136 | 130 | 107 | 143 | 155 | 134 | 117 | 169 | 181 | 176 | 560 | 534 | 572 |
| SECONDARY EDUCATION | 9 | 19 | 84 | 192 | 198 | 110 | 263 | 222 | 229 | 256 | 237 | 257 | 720 | 676 | 680 |
| LETTERS AND SCIENCE | 39 | 49 | 139 | 236 | 285 | 179 | 216 | 204 | 332 | 189 | 306 | 241 | 680 | 844 | 891 |
| INDUSTRIAL TECHNOLOGY | 0 | 1 | 2 | 40 | 1 | 0 | 36 | 91 | 98 | 14 | 10 | 88 | 90 | 103 | 188 |
| CRIMINAL JUSTICE | 0 | 0 | 0 | 0 | 0 | 4 | 15 | 28 | 92 | 3 | 10 | 28 | 18 | 38 | 124 |
| GENERAL UNDERGRADUATE | 1049 | 690 | 503 | 257 | 69 | 411 | 3 | 3 | 41 | 5 | 36 | 11 | 1314 | 798 | 966 |
| TOTAL | 1399 | 1431 | 1372 | 1619 | 1415 | 1561 | 1648* | 1538 | 1781 | 1593* | 1682 | 1770 | 6259* | 6066 | 6484 |

*included previous totals in Vocational Technical. These totals are listed on Total Enrollment Statistics.

Source: Richard N. Hall
Director, Office of Admissions and Records

## SUMMARY

The shortage of teachers has been discussed for years as a crucial problem. In 1963, for example, the NEA estimated that the total teacher shortage was 134,000. In 1969, the NEA continued to estimate that the demand for new teachers exceeded the expected supply by 224,200, when a minimum quality criterion was considered. A minimum quality criterion assumes that all teachers without bachelor's degrees will be replaced with degree teachers. It also demands a reduction in elementary class size to no more than 34 pupils and a maximum average daily load for secondary teachers of no more than 199. On a national level it seems unlikely that this criterion will be accomplished, while in New York State statistics indicate that this may have been attained.

Despite this apparent shortage of "qualified" teachers, decreases in the number of births, and increases in the number of college graduate education majors reveal a trend towards a surplus of available teachers. For example, between 1957 and 1969, the number of births decreased approximately 750,000, or 18 percent, while the number of graduates certified to teach increased more than 260 percent from 109,000 to 280,000. Although presently the oversupply of teachers is in selective areas, such as secondary social studies and male physical education, projections indicate that surpluses will soon exist virtually in all areas.

Unfortunately, it is difficult to develop accurate projections of the demand for teachers. Predictions are confounded by complex variables, including birth and fertility rates, the number of college graduates and education majors, reentry rates of former teachers, private school enrollments, availability of Federal funding, and the general status of the

economy.

Although, in general, State and local trends reflect national trends in teacher preparation and demand, rates of increase for education graduates within the State exceed those of the nation. From 1959 to 1968, increases for education graduates over the previous year averaged 7.5 percent on a national level, while for the same period in New York State increases averaged over 13 percent. When 1969 education graduates are compared to those in 1968, the national rate of increase was 19.1 percent, while on the State level it was 54.2 percent. Presently, New York State graduates approximately 11 percent of all new teachers trained in the nation. Since enrollments have tended to stabilize at the State University College at Buffalo, the phenomenon is apparent, but less acute. In 1970, for example, in Elementary Education 61.8 percent were placed in teaching positions, while only 7.0 percent of those who replied to the College indicated that they were still available for placement.

Despite certain inconsistencies in the manner in which data were reported, in addition to the number of gross estimates made by those responsible for reporting these data, the trend seems clear. The teacher shortage has been alleviated and may, in fact, have reached a point of oversupply, at least in selected areas. For the next few years the number of prospective teachers will increase substantially, while the number of school age children will decrease. The problem may be more acute in New York State, since the number of education graduates is increasing more rapidly than on the national level.

## RECOMMENDATIONS

1. Greater flexibility should be incorporated into certification programs. A base of courses, experiences, and competencies common to several discrete teaching areas should be identified. This would enable prospective teachers to become certified in several teaching areas or to shift areas either during or after their college training.

2. Graduate programs designed to prepare teachers for two-year and technical programs should be expanded. The expansion of two-year colleges seems likely through the 1970's. Sixty-hour certification programs, leading to a master's degree or professional diploma, would enable individuals to qualify for jobs in two-year community colleges and technical institutes.

3. The development of a competency-based teacher training program may enable the College to prepare teachers and specify those skills developed during the training program. A program of this type would make it theoretically possible to rank prospective teachers. Consequently, if an oversupply of teachers does develop, the most effective individuals could be selected. In this manner the profession will be upgraded and districts will be able to employ teachers possessing the specific skills required for particular programs. This goal could, of course, also be accomplished within the traditional teacher education programs.

4. The intention behind the current emphasis by the State Education Department on developing competency-based certification should be examined carefully. Originally one of the major reasons was the

desire to increase the number of certified teachers to ease existing shortages. If shortages no longer exist, perhaps the major focus should be the improvement of teaching competence and not primarily the increase of available candidates.

5. Patterns of differentiated staffing should be examined in order to develop training programs based on a career ladder model for teaching aides, assistants, and associates. This could include the various technical and support services such as specialists in media, curriculum, recreation, community work, pupil-personnel support, and student management.

6. Admissions standards should be modified, both on an academic and performance basis. Presently criteria are limited largely to high school achievement and performance on verbal and math achievement tests such as the Scholastic Achievement Test or the Regents Scholarship Examination. These criteria could be expanded to include specific performance skills and attitudinal prerequisites required of students before they enter a program. These could include areas such as establishing rapport with a small group of children or effectiveness in working with a large group. Performance criteria are already in use in certain areas of the profession, such as Art and Physical Education. It should be stressed that criteria relevant to the education of the socially and academically disadvantaged should be identified and used in order that prospective candidates from disadvantaged backgrounds would not be eliminated.

7. State and regional studies should be conducted in an effort to determine trends in teacher supply and demand. It seems likely that the

Western New York area will reflect general statewide trends. Western New York should be somewhat more stable than the New York Metropolitan area and somewhat less stable than the less densely populated areas, such as those located in the northeastern New York State. Although it is difficult to make precise estimates regarding teacher supply, gross trends can be predicted. The two major factors seem to be the number of births and availability of government funds for expanded programs.

8. Individuals concerned with student advisement both at the high school and college level should become more familiar with trends in the demand for manpower. It is not suggested that counselors control the vocational choices of students, but that individuals be made aware of specific economic and demographic trends which could effect their future employment.

9. Any interpretation of this information should be made with the awareness that the apparent oversupply of teachers is related to the depressed status of the economy. An initial reaction might be to curtail teacher education programs. However, the lack of teaching opportunities relates closely to a general lack of employment. Consequently, the implications of this study relate to all college level programs, not only education.

10. Expansion of any college level program should be viewed with caution. However, in view of the increased demand for college training opportunities it would seem unwise to use manpower needs as the only criterion for the maintenance or expansion of programs. Other factors, such as the prerogative of individuals to select

certain majors, even when they are aware of a potential lack of opportunity, should be considered.